

REMARKS/ARGUMENTS

Favorable consideration of this application is respectfully requested. Applicant has amended claim 5 and canceled claims 1-4 and 6-8 and added new claims 9-19. Favorable reconsideration of this application is, consequently, earnestly solicited in view of the following remarks.

Claims 1, 2, 4-6 and 8 were rejected under 35 U.S.C. 102(b) as being anticipated by Tillin et al. (Tillin), U.S. Patent No. 6204904. Examiner alleges that Tillin teaches the method and device of the subject application. Claim 1 has been cancelled, Claim 5 has been amended to clarify the subject matter that Applicant regards as the invention. Claim 5, as originally filed is confusing. The linear polarizer and the reflector recited in the original claims are not required elements for the invention. The polarizer and the reflector were included in the detailed description to illustrate the performance of the quarter wave plate as described on page 4, lines 9-12, page 5, line 15 to page 6, line 11, and lastly on page 8, lines 7-10.

In regard to the Tillin reference cited by the Examiner, Applicant provides the following comparison between Tillin and the amended claims. First, the application for which the devices are used is different. Tillin teaches a device for a reflective liquid crystal display. The liquid crystal element in Tillin is used as a display panel to control the grey scale, so it requires that a driving voltage be changed from an off state to an on state with various grey scales. In the off state, the liquid crystal element combines with the other two retarders to perform as a quarter-wave plate because performance as a quarter wave plate is required to achieve a high contrast ratio in broadband.

Unlike Tillin, the subject application does not recite a liquid crystal display, the subject application is directed toward producing a quarter-wave plate. The liquid crystal element in the present invention functions as a retarder. Because the liquid crystal elements function only as a retarder, a driving voltage is not required since the quarter-wave plate is not turned on and off. It simply is just a quarter wave plate.

Second, Tillin teaches that the retardation of the three phase retarders should be substantially $\lambda/2$, $\lambda/2$ and $\lambda/4$, respectively, to assure the device is dark in the on state and bright in the off state. And the total retardation of the retarder arrangement is equal to $(2n+1)\lambda/4$, where n is an integer and λ is a wavelength of visible light.

Unlike Tillin, the subject application does not require a restriction between the retarders and $\lambda/4$ because there is not an on state and an off state. The resulting device is simply a quarter-wave plate, not a liquid crystal display. As such, there is no on state and off state requirements for function of the claimed quarter-wave plate. All that is required is for the two uniaxial polymeric films with the liquid crystal film sandwiched between them function as a quarter-wave plate.

The third difference is that the subject invention exhibits wider bandwidth than Tillin.

Applicant believes that independent claim 5, as amended, clarifies that the device is nothing more than a quarter-wave plate. For the reasons provided, Application believes that claim 5 is allowable under 35 U.S.C. 102(b), and requests removal of the rejection.

New claim 9 has been added and depends from amended claim 5 to clarify that inclusion of the linear polarizer layered with the quarter-wave plate produces a circularly polarized light as described on page 4, lines 12-16. No new matter has been added.

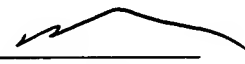
New dependent claims 10-14, depending from claim 5 have been added to clarify the subject matter Applicant regards as the invention as described in the specification starting one page 7, lines 1-4. No new matter has been added.

A new set of claims 15-19 directed toward a circular polarizer device have been added to claim the subject matter Applicant regards as the invention as described in the specification on page 4, lines 9-16. No new matter has been added.

Claims 3 and 7 were rejected under 35 U.S.C. 103(a) as being unpatenable over Tillin in view of Hasebe et al, U.S. Patent No. 5863457. Claims 3 and 7 have been canceled thus Applicant requests removal of the rejection.

In view of the foregoing considerations, it is respectfully urged that claims 5 and 9-19 be allowed. Such action is respectfully requested. If the Examiner believes that an interview would be helpful, the Examiner is requested to contact the attorney at the below listed number.

Respectfully Submitted;



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